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SPECIFICATION FOR HIGH-SPEED BOBBINS FOR JUTE INDUSTRY

(First Revision)

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Indian Standard

SPECIFICATION FOR HIGH-SPEED BOBBINS FOR JUTE INDUSTRY

(First Revision)

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SPECIFICATION FOR HIGH-SPEED BOBBINS FOR JUTE INDUSTRY

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 5 February 1981, after the draft finalized by the Jute Mill Accessories and Jute Machinery Spare Parts Sectional Committee had been approved by the Textile Division Council.

0.2 High speed jute bobbin consists of a top flange, a shank and a bottom flange. The top flange is generally made of plastics or vulcanized fibre or a combination of the two. The shank of the bobbin is generally manufactured from good quality timber. Often this wooden shank is covered either on the outside or on the inside or on both the sides with aluminium tube. The bottom flange of the bobbin is usually made from good quality timber or a ply combination of vulcanized fibre and plastics.

0.3 This standard was originally published in 1965. In this revision, bobbins of sizes 165 mm lift × 76 mm flange diameter (used on 108 mm-pitch apron-draft spinning frame with Baxter flyer) and 145 mm lift × 76 mm flange diameter (used on 108 mm pitchslip-draft spinning frame with Baxter flyer) have been added.

0.4 To familiarize the industry with the International System (SI) units, the recommended SI units for use in the textile industry are given in Appendix B.

0.4.1 The Standards of Weights and Measures Act, 1976 also stipulates use of SI units.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

---

*Rules for rounding off numerical values (*revised*).

1. SCOPE

1.1 This standard prescribes requirements for four sizes of high-speed jute bobbins used on jute spinning frames of pitches 140 and 108 mm.

2. GENERAL REQUIREMENTS

2.1 Material — The shank and flanges of bobbins shall be made of materials as specified in the contract or order. Timber, whenever used in the manufacture of shanks or flanges, should be of good quality and well-seasoned. It may be of any of the species listed in Appendix A.

NOTE — IS : 1141-1973* may be referred for correct seasoning procedure and IS : 4970-1973† for identification of various commercial timbers.

2.2 Manufacture — The top and bottom flanges shall be well secured to the shank of the bobbin by suitable means. The use of aluminium bush or tube shall be in accordance with the contract or order. The bobbin should be finished smooth. It should be free from any visible defects.

NOTE — It is advisable to check the wooden tubes (used as shank) or eccentricity before fitting metal tubes.

2.3 Shape — In shape, the bobbin should generally be as illustrated in Fig. 1.

3. SPECIFIC REQUIREMENTS

3.1 Dimensions — The bobbins of various sizes shall comply with the dimensions specified in Table 1 when read with Fig. 1. The permissible tolerance in dimensions has also been specified.

3.2 Mass — The mass per 100 bobbins shall be as specified in the contract or order. A tolerance of ± 4 percent shall, however, be allowed.

3.3 Concentricity — The flanges of the bobbins shall be concentric with the bore of the shank.

3.4 Driving Holes — The number of driving holes in a bobbin should be 4 to 8 as ordered.

3.5 Thickness and Length of Aluminium Bush or Tube — The thickness of aluminium bush or tube if used shall be not less than 0·75 mm. Where aluminium bushes are required to be used, the length of the bush shall be not less than 25 mm at the top and 28 mm at the bottom of the bobbin. The length of the outside aluminium tube shall be not less than the nominal bobbin lift.

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*Code of practice for seasoning of timber (*first revision*).

†Key for identification of commercial timbers (*first revision*).

TABLE 1 DIMENSIONS OF HIGH SPEED BOBBINS FOR JUTE INDUSTRY

(*Clause* 3.1 and *Fig.* 1)

SIZE No.	SIZE		PITCH OF THE FRAME	DIMENSIONS (*see* FIG. 1) mm									
	Lift of the Bobbin	Bottom Flange Dia		*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*J*	*K*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	190	89	140	210·0	89	38	20·0	22·30	216	57·0	10	10·0	6·0
2	165	76	108	184·0	76	30	19·0	19·30	188	45·0	10	10·0	4·0
3	145	76	108	164·0	76	30	19·0	16·00	168	45·0	9	10·0	4·0
4	145	68	108	164·0	68	30	19·0	16·00	168	45·0	9	10·0	4·0
TOLERANCES	—	—	—	+ 1·0 − 0·0	± 1	± 1	± 0·5	+ 0·25 − 0·10	+ 2 − 0	± 0·5	+ 1 − 0	+ 0·5 − 0·0	—

NOTE — The values of '*K*' are for information only.

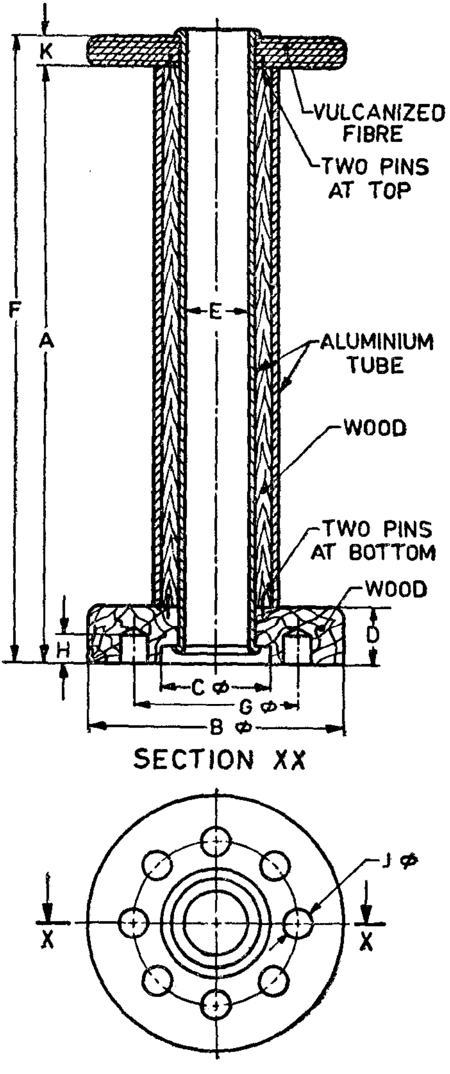

FIG. 1 A TYPICAL HIGH SPEED BOBBIN

3.6 Method of Test — The dimensions and concentricity of the bobbins shall be checked by the use of suitable calipers, gauges and a flat surface.

4. PACKING AND MARKING

4.1 Each bobbin shall be marked with the name/trade-mark of the manufacturer.

4.2 Each bobbin marked as in **4.1** should be wrapped in polyethylene film. An agreed number of such bobbins shall be packed in gunny bags for local delivery and in wooden cases for outstation delivery.

4.3 Each bag/wooden case shall be marked with the following:

a) Name of the material,
b) Size of the *bobbins* as ' lift (mm) × bottom flange dia (mm) ',
c) Pitch (mm) and drafting system of the spinning frame for which the bobbin is suitable,
d) Gross and net mass,
e) Number of bobbins contained in it,
f) Name/trade-mark of the manufacturer, and
g) Any other information desired by purchaser.

4.4 The bobbins may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

5. SAMPLING

5.1 Lot — All bobbins of the same size, manufactured from the same raw materials and delivered to a buyer against one despatch note shall constitute a lot.

5.2 The conformity of a lot to the requirements of this specification shall be determined on the basis of tests carried out on the bobbins selected from it.

5.3 Unless otherwise agreed to between the buyer and the seller, the number of bobbins to be selected from a lot shall be as given in Table 2.

TABLE 2 NUMBER OF BOBBINS TO BE SELECTED FROM A LOT AND PERMISSIBLE NUMBER OF DEFECTIVES

(*Clauses* 5.3 *and* 5.6)

NUMBER OF BOBBINS IN THE LOT	VISUAL CHARACTERISTICS		DIMENSIONS AND CONCENTRICITY		MASS, NO. OF BOBBINS TO BE SELECTED
	No. of Bobbins to be Selected	Permissible No. of Defectives	No. of Bobbins to be Selected	Permissible No. of Defectives	
(1)	(2)	(3)	(4)	(5)	(6)
Up to 100	20	1	5	0	All
101 ,, 150	32	2	8	0	100
151 ,, 300	50	3	13	0	
301 ,, 500	80	5	20	1	
501 ,, 1 000	125	7	32	2	
1 001 ,, 3 000	200	10	50	3	100 for every set of 1 000 bobbins
3 001 and above	315	14	80	5	

5.4 The bobbins shall first be tested for mass. If the lot is found conforming to the requirement of mass, it shall then be tested for other characteristics. The sample taken for checking mass may be used for selecting required number of bobbins for other characteristics. If found necessary, more bobbins may be selected afresh from the lot.

5.5 The bobbins shall be selected at random from at least 20 percent of the packages, approximately equal number of bobbins being chosen from each of the selected packages.

5.6 Criteria for Conformity — The lot shall be considered as conforming to the requirements of this specification if the following conditions are satisfied:

a) Mass per 100 bobbins meets the specified requirements;

b) The number of bobbins found defective in respect of visual characteristics, namely, shape, freedom from visible defects and smoothness of surface does not exceed the corresponding number specified in col 3 of Table 2; and

c) The number of bobbins found defective in respect of dimensions, including thickness and length of aluminium bush or tube, and concentricity does not exceed the corresponding number given in col 5 of Table 2.

APPENDIX A

(*Clause* 2.1)

SPECIES OF TIMBER SUITABLE FOR THE MANUFACTURE OF HIGH-SPEED BOBBINS FOR JUTE INDUSTRY

Trade Name	*Botancial Name*
1. Badam	*Terminalia procera* Roxb.
2. Birch	*Betula* Linn.
3. Bonsum	*Phoebe* Nees
4. Champ	*Michelia champaca* Linn.
5. Chaplash	*Artocarpus chaplasha* Roxb.
6. Chickrassy	*Chukrasia tabularis* A. Juss.
7. Haldu	*Adina cordifolia* Benth. & Hook. f. Korth.
8. Kalam	*Mitragyna parvifolia* (Roxb.)
9. Kanju	*Holoptelea integrifolia* Planch.
10. Kuthan	*Hymenodictyon excelsum* Wall.
11. Mango	*Mangifera indica* Linn.
12. Pali	*Palaquium ellipticum* (Dalz.) Baill.
13. Silver oak	*Grevillea robusta* A Cunn.
14. White Chuglam	*Terminalia bialata* Steud.

APPENDIX B

(*Clause* 0.4)

RECOMMENDED SI UNITS FOR TEXTILES

Sl No.	Characteristic	SI Units		Application
		Unit(s)	Abbreviation(s)	
(1)	(2)	(3)	(4)	(5)
1)	Length	Millimetre	mm	Fibres
		Millimetre, centimetre	mm, cm	Samples, test specimens (as appropriate)
		Metre	m	Yarns, ropes, cordages, fabrics
2)	Width	Millimetre	mm	Narrow fabrics
		Centimetre	cm	Other fabrics
		Millimetre, centimetre	mm, cm	Samples, test specimen (as appropriate)
		Centimetre, metre	cm, m	Carpets, druggets, *DURRIES* (as appropriate)
3)	Thickness	Micrometre (micron)	µm	Delicate fabrics
		Millimetre	mm	Other fabrics, carpets, felts
4)	Linear-density	Tex	tex	Yarns
		Millitex	mtex	Fibres
		Decitex	dtex	Filaments, filament yarns
		Kilotex	ktex	Slivers, ropes, cordage
5)	Diameter	Micrometre (micron)	µm	Fibres
		Millimetre	mm	Yarns, ropes, cordages
6)	Circumference	Millimetre	mm	Ropes, cordages
7)	Threads in fabric:			Woven fabrics (as appropriate)
	a) Lengthwise	Number per centimetre	ends/cm	
		Number per decimetre	ends/dm	
	b) Widthwise	Number per centimetre	picks/cm	
		Number per decimetre	picks/dm	
8)	Warp threads in loom	Number per centimetre	ends/cm	Reeds
9)	Stitches in knitted fabric:			Knitted fabrics (as appropriate)
	a) Lengthwise	Courses per centimetre	courses/cm	
		Courses per decimetre	courses/dm	
	b) Widthwise	Wales per centimetre	wales/cm	
		Wales per decimetre	wales/dm	

Sl No.	Characteristic	SI Units		Application
		Unit(s)	Abbreviation(s)	
(1)	(2)	(3)	(4)	(5)
10)	Stitch length	Millimetre	mm	Knitted fabrics, made-up fabrics
11)	Mass per unit area	Grams per square metre	g/m^2	Fabrics
12)	Mass per unit length	Grams per metre	g/m	Fabrics
13)	Twist	Turns per centimetre	turns/cm	Yarns, ropes (as appropriate)
		Turns per metre	turns/m	
14)	Test or gauge length	Millimetre, centimetre	mm, cm	Fibres, yarns and fabric specimens (as appropriate)
15)	Breaking load	Millinewton	mN	Fibres, delicate yarns (individual or skeins)
		Newton	N	Strong yarns (individual or skeins), ropes, cordages, fabrics
16)	Breaking length	Kilometre	km	Yarns
17)	Tenacity	Millinewton per tex	mN/tex	Fibres, yarns (individual or skeins)
18)	Twist factor or twist multiplier	Turns per centimetre × square root of tex	turns/cm × $\sqrt{\text{tex}}$	Yarns (as appropriate)
		Turns per metre × square root of tex	turns/m × $\sqrt{\text{tex}}$	
19)	Bursting strength	Newton per square centimetre	N/cm^2	Fabrics
20)	Tear strength	Millinewton, newton	mN, N	Fabrics (as appropriate)
21)	Pile height	Millimetre	mm	Carpets
22)	Pile density	Mass of pile yarn in grams per square metre per millimetre pile height	g/m^2/mm pile height	Pile carpets
23)	Elastic modulus	Millinewton per tex per unit deformation	mN/tex/unit deformation	Fibres, yarns, strands

INDIAN STANDARDS ON JUTE MILL ACCESSORIES AND JUTE MACHINERY SPARE PARTS

IS:	
698-1970	Picking sticks (arms) for overpick jute looms (*first revision*)
699-1955	Spool centres for jute spool winding machines
759-1956	Blanks for swells of jute looms
1041-1957	Box back blanks for jute looms
1042-1957	Boards for lay races of jute looms
1043-1957	Blanks for lay blocks for jute looms
1186-1971	Shuttles for hessian and sacking looms (*first revision*)
1552-1978	Pitch-bound wire reeds for jute looms (*second revision*)
1903-1977	Recommendations on shape and dimensions of jute loom pickers (*first revision*)
1938-1974	Cotton cambs for use in jute looms (*first revision*)
2784-1971	Shuttles for automatic cop-changing jute looms (*first revision*)
2910-1971	Shuttles for jute broad looms (*first revision*)
3825-1974	Inset mail wire healds for jute weaving (*first revision*)
4462-1974	Contact wire healds for jute weaving (*first revision*)
4909-1968	Card and gill pins for use in jute industry
5944-1971	Accessories for use in shuttles for jute looms
7034-1973	Wooden staves used for drum rollers of jute carding machines
7075-1973	Card board tubes used as cores for jute fabric rolls

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- Physical test methods
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- Rayon fabrics, handloom
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- Sampling of textiles, methods for
- Silk fabrics — handloom and khadi
- Sizing and finishing materials
- Spinning machinery components
- Terminology
- Textile floor coverings
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